

REMARKS / ARGUMENTS

In amended Figure 2B, the lines are uniformly thick and well defined, clean, durable, and black.

Claims 10 and 12 remain in this application. Claims 1-9, 11, and 13-19 have been canceled without prejudice to prosecuting these same, or similar claims, in subsequently filed applications. Claims 20 and 21 have been withdrawn without prejudice to prosecuting these same, or similar claims, in subsequently filed applications. Claims 10 and 12 are amended in the instant correspondence.

Claims 1-19 were rejected. The Examiner made the following rejections:

- (1) The Examiner withdraws claims 20 and 21 as being directed to a non-elected invention.
- (2) The Examiner notes the objection raised, by the Draftsperson, to a pending figure.
- (3) Claims 17-19 are rejected under 35 U.S.C. § 112 (first paragraph).
- (4) Claims 1-19 are rejected under 35 U.S.C. § 112 (second paragraph).
- (5) Claims 1-9 and 14-19 are rejected under 35 U.S.C. § 102.
- (6) Claims 10-13 are rejected under 35 U.S.C. § 103.

The Applicants believe the present amendments and the following remarks traverse the Examiner's rejection of the pending claims. These remarks are presented in the same order as they appear above.

1. Claims 20 and 21 Are Drawn To The Embodiments Of The Invention As Originally Claimed

In the Office Action dated March 18, 2003, the Examiner alleges that claims 20 and 21 are outside the scope of the embodiments of the invention originally claimed in claims 1-16 of the application as filed. The Examiner, therefore, has summarily withdrawn claims 20 and 21 from prosecution in the instant application. The Applicants object to the withdrawal of these claims.

The Examiner is reminded that, "if the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to independent or distinct inventions." See, MPEP 803. While the Examiner argues that claims 1-19 and claims 20 and 21 enjoy a different classification, Applicants respectfully submit that it would not be burdensome, to the Examiner, to perform a search directed to *both*: i) methods of identifying a test compound that can act as an agonist or antagonist to the melvalonate pathway of sterol synthesis and ii) a method for screening overexpressed genes. However, in order to advance their business interests and without acquiescing to the Examiner's arguments (while expressly reserving the right to prosecute the same, or similar, claims as filed); Applicants have withdrawn claims 20 and 21 from the pending application.

2. The Drawings Are Complaint With 37 C.F.R. 1.84

Applicants have amended drawing 2B (attached) such that the lines are uniformly thick and well defined, clean, durable, and black. Therefore, Fig. 2B is complaint with 37 CFR 1.84(l).

3. The Claims Are Enabled

A. "Homolog" Is Well Described

The Examiner rejects claims 17-19 under 35 U.S.C. § 112, first paragraph. Specifically, the Examiner alleges the rejected claims contain, "subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention."¹ More specifically the Examiner states, "the specification does not sufficiently describe a representative number of species [i.e. of Mod5p homologs] of the invention by actual reduction to practice or by disclosure of relevant identifying characteristics."²

The Examiner appears to suggest that Applicants need present some requisite number of examples (of compounds that qualify as Mod5p homologs) to claim the "genus" of Mod5p homologs. The Examiner is reminded that a specification may, within the meaning of 35 U.S.C. § 112 (first paragraph), contain a written description of a broadly claimed invention without describing all species that claim encompasses." See, *In re Robins*, 429 F.2d 452, 456-57, 166 USPQ 552, 555 (C.C.P.A. 1970). In the application as filed, the Applicants provide a teaching for the selection of compounds that qualify as Mod5p homologs. Specifically, Applicants state that,

"[t]he term "homology" when used in relation to proteins refers to a degree of similarity. There may be partial homology or complete homology (*i.e.*, identity). A partially similar sequence is one that may partially inhibit a similar sequence from performing its function (*e.g.*, enzymatic, binding, etc) *in vivo* or *in vitro* and is referred to using the functional term "substantially homologous." The inhibition function of the substantially similar sequence may be examined using an enzymatic assay, a binding assay or other assay designed to measure the particular function of the substantially similar protein. A substantially homologous proteins may compete for or interfere with a homolog and inhibit its function (*e.g.*, the binding or enzymatic function). This is not to say that conditions of low stringency are such that non-specific interaction is permitted; low stringency conditions require that the interaction be a specific (*i.e.*, selective) interaction."³

¹ Office Action mailed March 18, 2003, page 4.

² *Id.* at page 5.

³ Application as filed, pp. 10-11.

The Applicants respectfully submit, therefore, they have satisfied the written description requirement by showing (in the application as filed) how skilled artisans could use the Applicants' teaching to (functionally) "select out" any species suitable for inclusion in the claimed methods. Indeed the Examiner is reminded that Applicants *are not* claiming Mod5p homologs as a composition of matter. Instead, they are claiming a screening methods employing the use of Mod5p homologs. Given the functional teaching set out above, Applicants are under no obligation to enumerate a certain number of "species" of Mod5p homologs in order to claim *the use* of these homologs in the pending screening methods. However, in order to further the Applicants' business interest and without acquiescing to the Examiner's argument, or waiving their right to prosecute claim as filed (or claims similar thereto), Applicants have canceled pending claim 17. Applicants respectfully request, therefore, the Examiner's pending rejection, under 35 U.S.C. § 112 (first paragraph), be withdrawn.

4. The Claims Are Definite

The Examiner is reminded that "[c]laims of a patent application *are to be construed in the light of the specification* and the understanding thereof by those skilled in that art to whom they are addressed'." *Application of Salem*, 553 F.2d 676, 683, 193 USPQ 513 (CCPA 1977) (quoting *In re Myers*, 410 F.2d 420, 425 (CCPA 1969) with emphasis added in *Salem*). Furthermore, "[t]he patent law 'allows the inventor to be his own lexicographer,' " *Loctite Corp. v. Ultraseal Ltd.*, 781 F.2d 861, 867, 228 USPQ 90, 93 (Fed. Cir. 1985) (quoting *Autogiro Co. of America v. United States*, 384 F.2d 391, 397, 155 USPQ 697, 702 (Ct. Cl. 1976)). The Applicants, therefore, are free to introduce any descriptive term or phase into the claims so long as these descriptors are adequately defined in the Specification.

A. Applicants Have Elaborated On The Steps In The Claimed Methods

The Applicants assert the claims as filed are definite and satisfy 35 U.S.C. §112 (second paragraph). However, in order to further the Applicants' business interests and without acquiescing to the Examiner's argument or waiving their right to prosecute the claims as filed (or claims similar thereto), Applicants have amended claims 10 and 12 to more

explicitly recite the sequence of the steps comprising the methods as claim. Specifically, Applicants have incorporated the phrase,

"measuring the growth of modified yeast cells within said treated modified yeast cell mixture and the growth of modified yeast cells within said untreated yeast cell mixture wherein, a difference in the growth of modified yeast cells within said treated modified yeast cell mixture and the growth of modified yeast cells within said untreated yeast cell mixture indicates the test compound has had an agonistic or antagonistic effect on the melvalonate pathway in sterol synthesis."

into the terminal step of every pending independent claim.⁴ With this amendment, Applicants present a measuring step, in each of the claimed methods, that evaluates the effect (either agonistic or antagonistic) of a given test compound, on sterol synthesis, in the claimed screening methods. In this respect, Applicants respectfully submit these amendments traverse the Examiner's rejection of the claims for failure to, "recite a step that recapitulates the method as set forth in the preamble of the claim."⁵

In addition, Applicants note the limitation of "and color", objected to by the Examiner, appears only in the cancelled claims.

Applicants also note that no new matter is added through these amendments and respectfully request the Examiner withdraw all pending rejections under 35 U.S.C. §112, second paragraph.

5. The Claims Are Not Anticipated

It is well settled law that, under 35 U.S.C. §102, anticipation "requires that each and every element of the claimed invention be disclosed in the prior art. . . . [i]n addition, the prior art reference must be enabling, thus placing the allegedly disclosed matter in the possession of the public." *Akzo N.V. v. U.S. International Trade Commission*, 1 USPQ 2d 1241, 1245 (Fed. Cir. 1986), *cert. denied*, 482 U.S. 909 (1987). Furthermore, "[t]he Examiner bears the burden of presenting at least a *prima facie* case of anticipation." *In re Sun*, 31 USPQ 2d 1451, 1453. The Applicants submit the Examiner has failed to make a

⁴ In order to advance their business interests and without acquiescing to the Examiner's arguments (while expressly reserving the right to prosecute the same, or similar, claims as filed); Applicants have canceled claims 1, 4, 7, 14, and 17 without prejudice to prosecuting these same, or similar claims, in subsequently filed applications.

⁵ Office Action mailed March 18, 2003, page 6.

prima facie case of anticipation. That is to say, none of the art cited by the Examiner in the instant Action discloses each and every element of the invention as claimed.

However, in order to advance their business interests and without acquiescing to the Examiner's arguments (while expressly reserving the right to prosecute the same, or similar, claims as filed); Applicants have: i) cancelled claims 1-9, 11, and 13-19 and ii) have amended claims 10 and 12. With regard to the amended claims 10 and 12, Applicants recite (in part) that, "modified yeast cells derived from wild type yeast cells, wherein said modified yeast cells express reduced cytosolic activity levels of Mod5p as compared to said wild type yeast cells, and wherein said modified yeast cells comprise a **CAN1 gene having a nonsense mutation** and a gene coding for a nonsense suppressor tRNA." Emphasis added.

Applicants note the Examiner admits that Boguta and Zoladek do, "not teach using the can1-100 nonsense mutation in their screens."⁶ Given that all of the Applicants' pending claims recite an element *the Examiner admits* is lacking in Boguta and Zoladek, it is axiomatic that these references cannot anticipate the invention as claimed. Applicants respectfully request, therefor, the pending rejections under 35 U.S.C. § 102 be withdrawn.

6. The Claims Are Not Obvious' Under 35 U.S.C. § 103(a)

A. The Examiner Fails to Make A *Prima Facie* Case of Obviousness

Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boguta in view of Gillman. In addition Claims 10-13 are, in a separate rejection under 35 U.S.C. 103(a), deemed by the Examiner as unpatentable over Zoladek in view of Gillman.

A *prima facie* case of obviousness requires citation to a combination of references which (a) disclose the elements of the claimed invention, (b) suggests or motivates one of skill in the art to combine those elements to yield the claimed combination, and (c) provides a reasonable expectation of success should the claimed combination be carried out. Failure to establish *any one* of the these three requirements precludes a finding of a *prima facie* case of obviousness, and, without more, entitles Applicant to allowance of the claims in issue. *See, e.g., Northern Telecom Inc. v. Datapoint Corp.*, 15 USPQ2d 1321, 1323 (Fed. Cir. 1990).

⁶ *Id.*

The Applicants respectfully submit the Examiner has failed to establish each of the three elements of a *prima facie* case of obviousness. In addressing this rejection, the Applicants have focused on independent claims that were rejected as obvious (e.g. claims 10 and 13); since non-obviousness of an independent claim necessarily leads to non-obviousness of claims dependent therefrom. See, § MPEP 2143.03 and *In re Fine*, 837 F.2d 1071, 1076, 5 USPQ2d 1596 (Fed. Cir. 1988).

i. No Motivation to Combine the References

A proper analysis, in view of 35 U.S.C. §103(a), demands the references cited by the Examiner be considered as whole and must suggest the desirability and, thereby, the obviousness of making the combination. *Hodash v. Block Drug Co., Inc.*, 786 F.2d 1136, 1143, n. 5, 229 USPQ 182, 187, n.5 (Fed. Cir. 1986). Applicants submit that references cannot be considered collectively until the Examiner points to some motivation to combine said references. This analysis prevents the Examiner from using the instant Specification to reconstruct, in hindsight, the invention as claimed. The Federal Circuit has articulated the policy behind this analysis:

To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed.

See In re Rouffet et al., 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998).

The above referenced prior art does not suggest the desirability of making the combination of elements which recapitulates the invention as claimed. In the Office Action mailed on March 18, 2003, the Examiner stated (with regard to both Boguta and Zoladek),

"It would have been obvious to the skilled artisan to combine the teachings of [Boguta / Zoladek] with those of Gillman to result in the claimed invention because each reference uses the same activity (suppression of nonsense mutations) to monitor the activity of the same allele of the same protein (Mod5p)"⁷

⁷ Office Action mailed March 18, 2003. With regard to Boguta, page 10. With regard to Zoladek, page 11.

The Applicants respectfully submit the Examiner presents bald conclusions in place of reasoned motivation, as articulated by the Federal circuit, to combine the cited art.

As noted above, *the Examiner admits* that Boguta and Zoladek do, "not teach using the can1-100 nonsense mutation in their screens."⁸ The Examiner attempts remedy *this missing element*, in the embodiments of the invention as claimed in claims 10 and 12, with a conclusory argument suggesting the alteration / recombination of the cited art to recapitulate the invention as claimed. Specifically, the Examiner states that given,

"the ordinary skilled artisan would have been motivated to combine the teachings [e.g. Boguta / Zoladek and Gillman] in order to obtain multiple means by which to test the activity of Mod5p. . . [a]bsent evidence to the contrary and *given the teachings of the stated prior art and the high level of skill of the ordinary skilled artisan at time of the applicants' invention*, it must be considered that said skilled artisan would have had a reasonable expectation of success in practicing the claimed invention"⁹
Emphasis added.

The *Rouffet* court, however, admonishes against such an unsupported statement.

Indeed, the Federal Circuit stated:

The Board did not . . . explain what specific understanding or technological principal within the knowledge of one of ordinary skill in the art would have suggested the combination. Instead, the Board merely invoked the high level of skill in the art. If such a rote invocation could suffice to supply a motivation to combine, the more sophisticated scientific fields would rarely, if ever, experience a patentable technological advance. Instead, in complex scientific fields, the Board could routinely identify the prior art elements in an application, invoke the lofty level of skill, and rest its case for rejection. To counter this potential weakness in the obviousness construct, the suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness. *Rouffet*, 47 USPQ2d at 1458.

As discussed above, and contrary to the Examiner's opinion, the *prior art provides no motivation to combine* the references to teach the incorporation of a can1-100 nonsense mutation into a method for screening compounds that are agonistic or antagonistic to the melvalonate pathway in sterol synthesis. The Examiner is reminded that obviousness may only be established by combining, or modifying, the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation is found in either

⁸ *Id.*

⁹ *Id.*

the references themselves or in the knowledge generally available to one of ordinary skill in the art. MPEP 2143.01 at 2100-98, citing *In re Fine*, 837 F.2d 1071, USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Unsupported speculation that a given reference *might* be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. MPEP 2143.01 at 2100-98, citing *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). The requirement that the Examiner make a showing of a suggestion, teaching or motivation is "an essential evidentiary component of an obviousness holding." *C.R. Bard, Inc. v. M3 Sys. Inc.*, 157 F.3d 1340, 1352 (Fed. Cir. 1998).

ii. The Examiner Must Provide Evidence

There are three sources the evidentiary component, which need be produced by the Examiner, to advance a rejection under 35 U.S.C. § 103: the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved. *Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573 (Fed. Cir. 1996). Nonetheless, regardless of the source of the requisite evidence, the Examiner's showing "must be clear and particular, and broad conclusory statements . . . standing alone, are not 'evidence'." *In re Dembiczak*, 175 F.3d 994, 1000 (Fed. Cir. 1999).

It is the Examiner's burden to present "evidence" and this showing must be "clear and particular." Importantly, since an Examiner is NOT one skilled in the art (under the law), the Examiner's opinion on what one skilled in the art might believe is of no moment. See, *In re Rijckaert*, 9 F.3d 1531, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993) ("[T]he examiner's assumptions do not constitute the disclosure of the prior art."). In the present case, the only suggestion to combine the cited references comes from the Examiner's personal conclusions. That is to say, the Examiner fails to provide any evidence (as discussed above) that documents how, one skilled in the art, would be motivated to practice the embodiments, currently rejected under 35 U.S.C. § 103(a), of the claimed invention.

**iii. The Combined References Do Not Teach Each And Every
Element of the Claims**

Even if the references are improperly combined, the references do not teach each and every element of the invention as claimed. That is to say, the references cited by the Examiner do not teach nor suggest the incorporation of a can1-100 nonsense mutation into a *method for screening compounds that are agonistic or antagonistic to the melvalonate pathway in sterol synthesis* wherein measuring the growth of modified yeast cells within a treated modified yeast cell mixture and the growth of modified yeast cells within an untreated yeast cell mixture, wherein a difference in the growth of modified yeast cells within the treated modified yeast cell mixture and the growth of modified yeast cells within the untreated yeast cell mixture indicates the test compound has had an agonistic or antagonistic effect on the melvalonate pathway in sterol synthesis.

Because the cited references (even if improperly combined) fail to disclose *all* the limitations of independent claims, rejected under 35 U.S.C. 103(a), a *prima facie* case of obviousness has not been made. Applicants respectfully request, therefore, the pending rejections under 35 U.S.C. § 103(a) be withdrawn.

CONCLUSION

Applicants submit the arguments set forth above traverse the Examiner's rejections and, therefore, request that these rejections be withdrawn for the reasons set forth above. Should the Examiner believe a telephone interview would aid in the prosecution of this application, Applicants encourage the Examiner to call the undersigned collect at 617.984.0616.

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Lines are uniformly thick and well defined, clean, durable, and black.

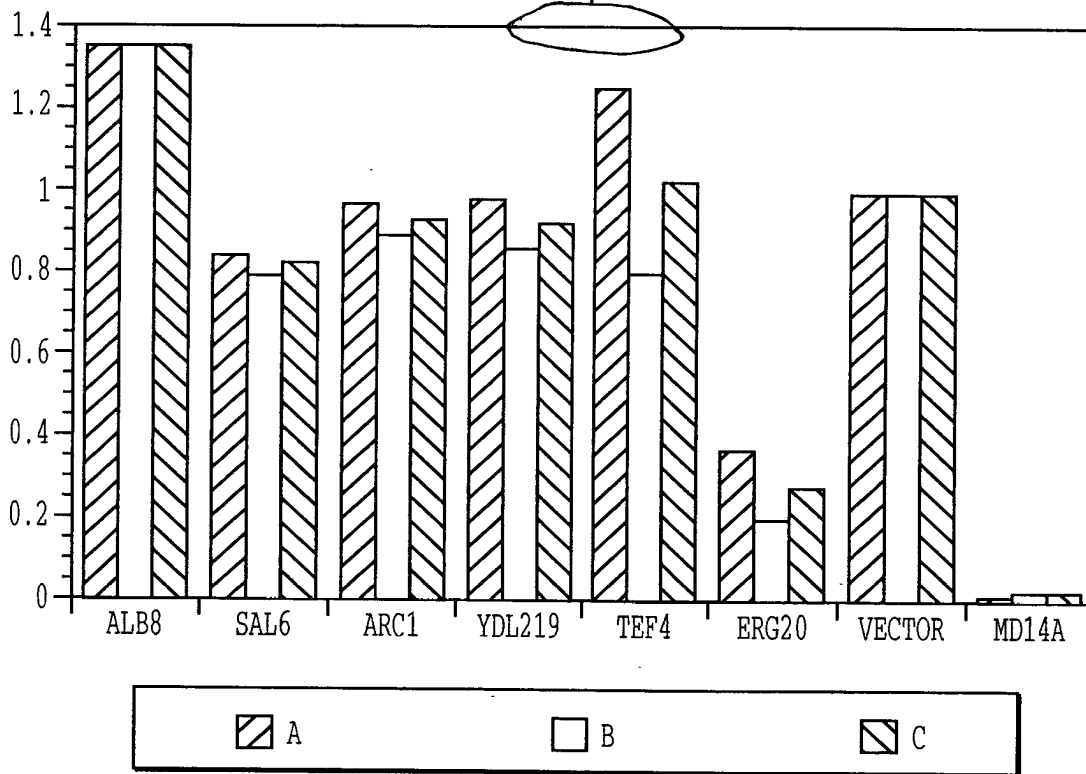


FIG. 2B

REC'D
AUG 2
TECH CE